Survey of Anaconda's Jackpile Uranium Mine for Petalostemum scariosum

Ed Kelley

Introduction

The Endangered Species Act of 1973 was signed into law on December 28. Among its provisions, the Act establishes two categories of species subject to Federal Protection: endangered species and threatened species. One of the major directives of this law was that the secretary of the Smithsonian Institution review the status of plant species which are now or may become endangered or threatened, and to devise methods for their conservation. A report to Congress was made the following year which included a list of endangered and threatened species. Of particular interest is list "A" which provides a state-by-state listing of endangered and threatened plant species. Among those taxa enumerated for New Mexico is Petalostemum scariosum (wats.) (Wemple). Subsequent research on the status of this species has indicated that it should be removed from the endangered and threatened species list (Wagner and Sabo, 1977).

Upon request of the U.S. Geological Survey and the U.S. Fish and Wildlife Service, this study was designed to determine if Petalostemum scariosum does actually or potentially exist within the boundaries of the Anaconda Jackpile uranium mining area.

Description and Location of Study Area

The Jackpile mining area described in this report covers about 3,000 acres on the Laguna Indian Reservation in Valencia County, New Mexico. The Rio Paguate, Rio Moquino, and Arroyo Moquino form the major drainage features of the mining area. Erosional remnants of cretaceous sandstones form mesas and buttes that border the alluvial-filled valleys of the drainage system. Cretaceous shales and Jurassic sandstone outcrops occur along the slopes of some of the mesas.

The mesas, buttes, and slopes support a blue grama-galleta (Bouteloua gracilis - Hilaria jamesii) grassland with pinyon (Pinus edulis) and juniper (Juniperus monosperma) occurring on the higher elevation sites. The shale and Jurassic sandstone outcrops support a low density population of broom snakeweek (Gutierrezia sarothrae), wild buckwheats (Eriogonum spp.) and three-awn grasses (Aristida spp.).

The alluvial valley floors support an alkali sacaton (Sporobolus airoides) grassland with scattered stands of four-wing saltbush (Atriplex canescens), shadscale (Atriplex confertifolia), and black greasewood (Sarcobatus vermiculatus). Willows (Salix spp.), salt cedar (Tamarix pentandra), sweetclovers (Melilotus spp.), horseweed (Erigeron canadensis), and wild rye (Elymus spp.) are the most abundant species in the dense vegetation of the riparian community along the Rio Paguate. The alkali soil along the Rio Moquino supports a sparse population of plants with alkali sacaton, willows, salt cedar and black greasewood being the most abundant species.

The overburden dumps and waste piles are generally devoid of vegetation. Those dumps that do support vegetation are dominated by four-wing saltbush, snakeweed, Russian thistle, and three-awn grasses. The reclaimed dumps and waste piles are dominated by species planted in the reclamation program. The first reclaimed site at the mine is about 17 months old and has been invaded by only 4 species not planted by Anaconda.

Methods

Surveys of the vegetation growing on the mesas, buttes, slopes, and valley floors have been conducted during the last two years. These surveys were conducted to evaluate the establishment and compare the growth of the vegetation on the reclaimed dumps to the natural vegetation of the different habitat types of the mining area (Reynolds et al. 1976, Kelley et al. 1977). These surveys have not identified any species of Petalostemum in the areas of the mine.

Because of these surveys, search efforts were concentrated to the riparian habitat along the Rio Paguate, Rio Moquino, and arroyos within the boundaries of the mine. Small areas on the mesas and slopes where wind blown sand has accumulated were also surveyed.

Results

A search of the suspect areas was performed during December, 1977. Petalostemum scariosum was not located during the survey. The survey identified the riparian area and the sandy terrace deposits along the Rio Paguate as the only suitable habitat for Petalostemum within the boundaries of the mine. Other species of Petalostemum (P. candidum willd., P. flavescens wats., and P. purpureum vent.) were collected from these sites along the Rio Paguate. These three species were also collected along State Road 279 between the Jackpile Mine and the Laguna pueblo during this survey. Petalostemum scariosum has been found along Interstate 40 near the Rio Puerco west of Albuquerque, New Mexico. Highway rights of way have

been identified as a preferred habitat for Petalostemum scariosum (R. Fletcher, U.S. Forest Service, Range Management Division, personal communication). Petalostemum scariosum has been collected on the Laguna Indian Reservation. These collections have been from the Rio Puerco Valley approximately 20 miles east of the Jackpile mine.

The results of the field survey, the literature review, and identification of previous collecting sites, indicate that the probability of Petalostemum scariosum occurring in the immediate vacinity of the Jackpile mine is very low.

Literature Cited

Wagner, Warren and David G. Sabo, 1977. Status Report on Petalostemum scariosum. Unpublished report to the U.S. Fish and Wildlife Service.

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